

**New Mexico Science Content Standards, Benchmarks, and Performance Standards**

**Kindergarten – 4th Grade**

**Strand II: Content of Science**

**Standard I (Physical Science):** Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

**K-4 Benchmark II:** Know that energy is needed to get things done and that energy has different forms.

Grade	<b>Performance Standards</b>
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<b>K</b>	Observe how energy does things (e.g., batteries, the sun, wind, electricity).
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<b>1</b>	Observe and describe how energy produces changes (e.g., heat melts ice, gas makes car go uphill, electricity makes TV work).
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<b>2</b>	Describe the usefulness of some forms of energy (e.g., electricity, sunlight, wind, sound) and how energy (e.g., heat, light,) can affect common objects (e.g., sunlight warms dark objects, heat melts candles).
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<b>4</b>	Identify the characteristics of several different forms of energy and describe how energy can be converted from one form to another (e.g., light to heat, motion to heat, electricity to heat, light, or motion).
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Demonstrate how electricity flows through a simple circuit (e.g., by constructing one).

**Strand III: Science and Society**

**Standard I:** Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

**K-4 Benchmark I:** Describe how science influences decisions made by individuals and societies.

Grade	<b>Performance Standards</b>
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<b>K</b>	Describe how science helps provide products we use every day (e.g., gasoline for cars; electricity for lights, refrigerators, TVs; gas or electricity for heating, cooking).
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<b>1</b>	Describe how science has assisted in creating tools (e.g., plows, knives, telephones, cell phones, computers) to make life easier and more efficient.
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Know that men and women of all ethnic and social backgrounds practice science and technology.

<b>2</b>	Know that some materials are better than others for making particular things (e.g., paper, cardboard, plastic, metal, fiberglass, wood).
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Understand that everybody can do science, invent things, and formulate ideas.

Know that science has discovered many things about objects, events, and nature and that there are many more questions to be answered.

<b>4</b>	Know that both men and women of all races and social backgrounds choose science as a career.
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**5th – 8th Grade**

**Strand I: Scientific Thinking and Practice**

**Standard I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

**5-8 Benchmark I:** Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.

**GradePerformance Standards**

**5** Plan and conduct investigations, including formulating testable questions, making systematic observations, developing logical conclusions, and communicating findings. Describe how credible scientific investigations use reproducible elements including single variables, controls, and appropriate sample sizes to produce valid scientific results. Communicate the steps and results of a scientific investigation.

**6** Examine the reasonableness of data supporting a proposed scientific explanation. Justify predictions and conclusions based on data.

**8** Evaluate the accuracy and reproducibility of data and observations. Use a variety of technologies to gather, analyze and interpret scientific data. Know how to recognize and explain anomalous data.

**Strand I: Scientific Thinking and Practice**

**Standard I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

**5-8 Benchmark II:** Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.

**GradePerformance Standards**

**5** Understand that different kinds of investigations are used to answer different kinds of questions (e.g., observations, data collection, controlled experiments). Understand that scientific conclusions are subject to peer and public review.

**6** Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations.

**7** Critique procedures used to investigate a hypothesis. Analyze and evaluate scientific explanations.

**8** Examine alternative explanations for observations. Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.

**Strand I: Scientific Thinking and Practice**

**Standard I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

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**5-8 Benchmark III:** Use mathematical ideas, tools, and techniques to understand scientific knowledge.

**GradePerformance Standards**

**5** Make predictions based on analyses of data, observations, and explanations.

**Strand II: Content of Science**

**Standard I (Physical Science):** Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

**5-8 Benchmark II:** Explain the physical processes involved in the transfer, change, and conservation of energy.

**GradePerformance Standards**

**8 Energy Transformation**

Know that electrical energy is the flow of electrons through electrical conductors that connect sources of electrical energy to points of use, including:

- electrical current paths through parallel and series circuits
- use of electricity by appliances and equipment (e.g., calculators, hair dryers, light bulbs, motors).